window glass. Soil sample distributions in both the plow zone and subsoil indicated that deposits of phosphorus, probably related to animal waste, were common. Calcium, magnesium, and potassium concentrations were low indicating little deposition of shell, brick, mortar, or wood ash. While the existence of artifacts indicated that some debris was allowed to accumulate, trash disposal took place elsewhere.

Comparison of Domestic and Agricultural Activity Areas

The domestic and agricultural activity areas revealed very different patterns of artifact and soil chemical distribution. The domestic activity area, not surprisingly, contained domestic artifacts such as the ceramic concentration between the farmhouse and the south side of the "back building" (Structure II; Figure 56). Soil chemical analysis disclosed higher levels of phosphorus, calcium, magnesium, and potassium within the plow zone and subsoil of the agricultural activity area than the domestic area (Figures 36 through 43). Plow zone artifact distributions in the agricultural activity area revealed areas of sheet midden deposition greater than those in the domestic activity area, but less than a dumping area located north of the agricultural area (Figures 56-65). Although the agricultural activity area was not kept as clean as the domestic activity portion of the Buchanan-Savin Farmstead, dumping was unacceptable. Most trash was deposited north of the agricultural activity area and west of the domestic activity area.

Yard layout changed as the Buchanan-Savin Farmstead evolved. The original layout typified in the 1857 Kent Mutual fire insurance record reflected a clear and distinct separation of domestic and agricultural activity areas (Figure 66). After 1857 and before the turn of the century, the Buchanan house was expanded to include the front parlor and rear kitchen additions. Around the time that Francis C. Armstrong occupied the site in 1910, the agricultural activity area was cleared of buildings and was plowed (Figure 66). Only the domestic structures the farmhouse, meat house, and back building remained.

T. R. Moffett's purchase of the property in 1921 marked a revitalization of agricultural pursuits at the site. Moffett probably constructed the modern dairy farm south of the historical farm location (Figure 67). Since the site's inception in the mid-nineteenth century, the Buchanan-Savin Farmstead's domestic activity area expanded but remained centered on the farmhouse; in comparison, by 1930 the agricultural activity area had shifted completely from east to south of the farmhouse. The domestic and agricultural activity areas were no longer separated by fencelines, but by a gravel drive. At the time of excavation in 1990, the dairy farm had fallen out of use and was utilized as part time storage for a large farm truck (Figure 67). By 1990, only the elderly Mrs. Savin remained at the Buchanan-Savin Farmstead, resulting in a severely restricted domestic occupation area.

The Buchanan-Savin Farmstead has demonstrated how the dualized activity areas appeared in the structures and midden deposits of historical occupations. The portion of the domestic activity area that was excavated was found to contain more ceramics and glass and generally lower amounts of plow zone scatter and low levels of soil chemical concentrations, than the agricultural activity areas. High amounts of architectural debris and high levels of soil chemical concentrations, particularly phosphorus, were typical of agricultural activity areas. Sheet middens were located near agricultural activity areas, but were clearly outside either the domestic or agricultural activity areas.

INTER-SITE ANALYSIS AND INTERPRETATIONS

INTRODUCTION

The archaeological remains found during the data recovery excavations of the Buchanan-Savin Farmstead were used to examine the regional research issues posited by the research design governing the site investigations. These investigations included housing dimensions,

FIGURE 66

Yard Proxemics of the Buchanan and Armstrong Occupations

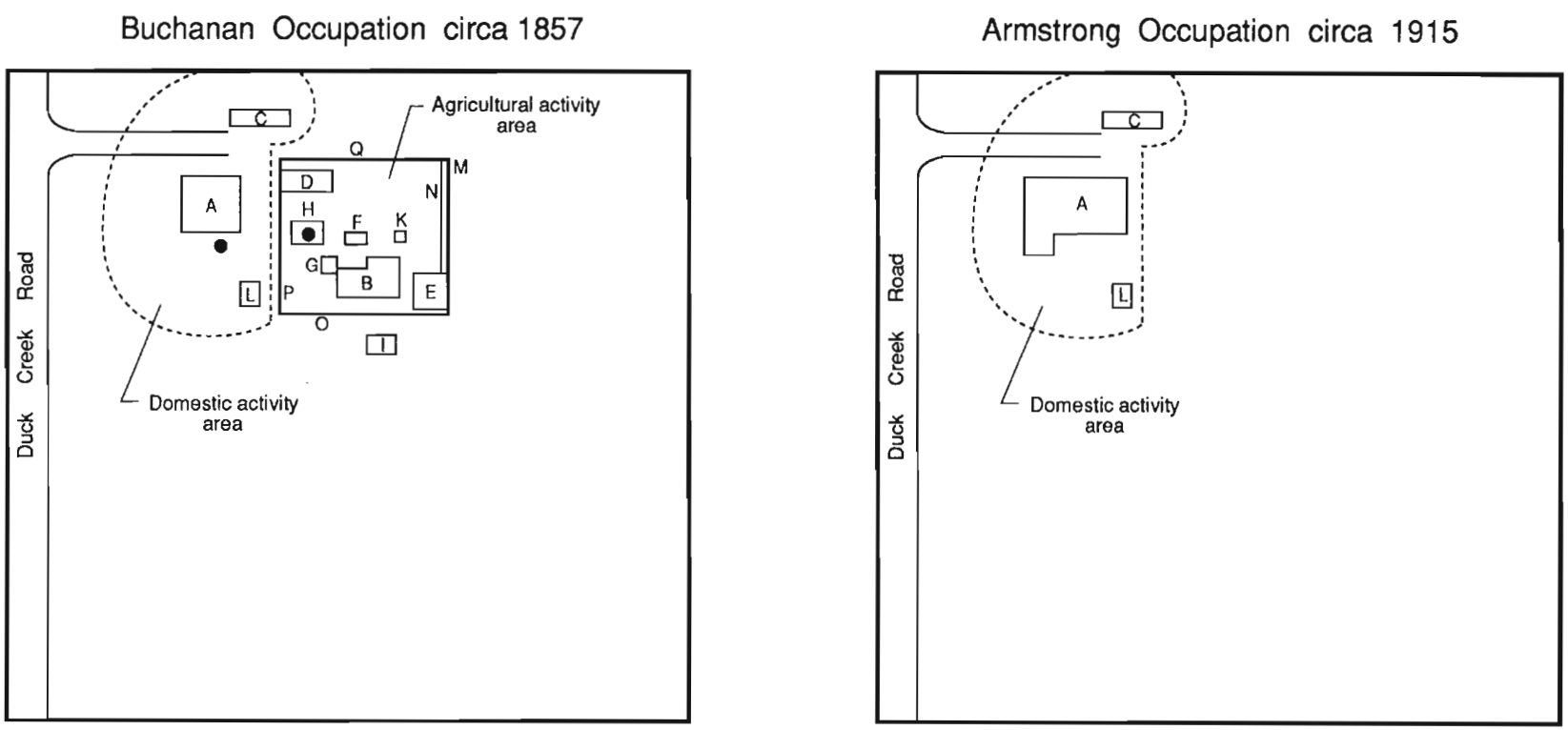
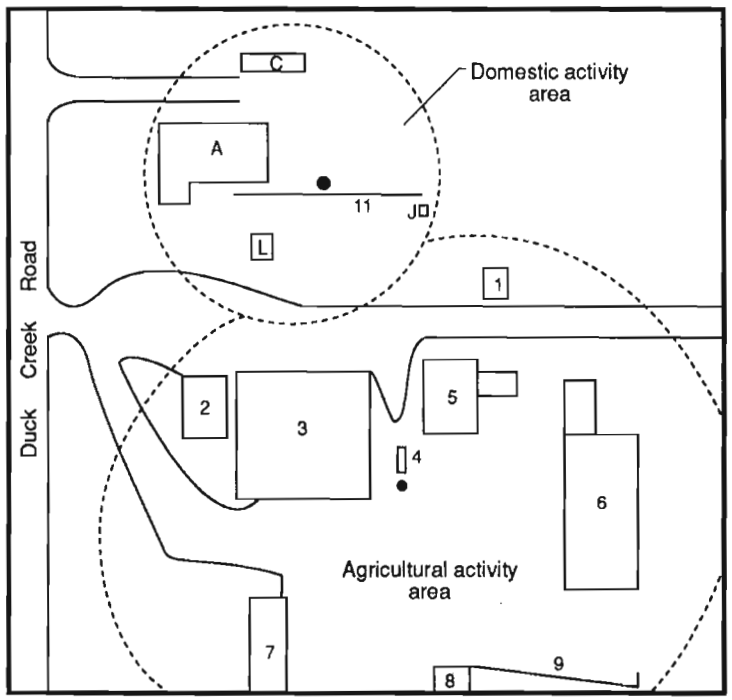
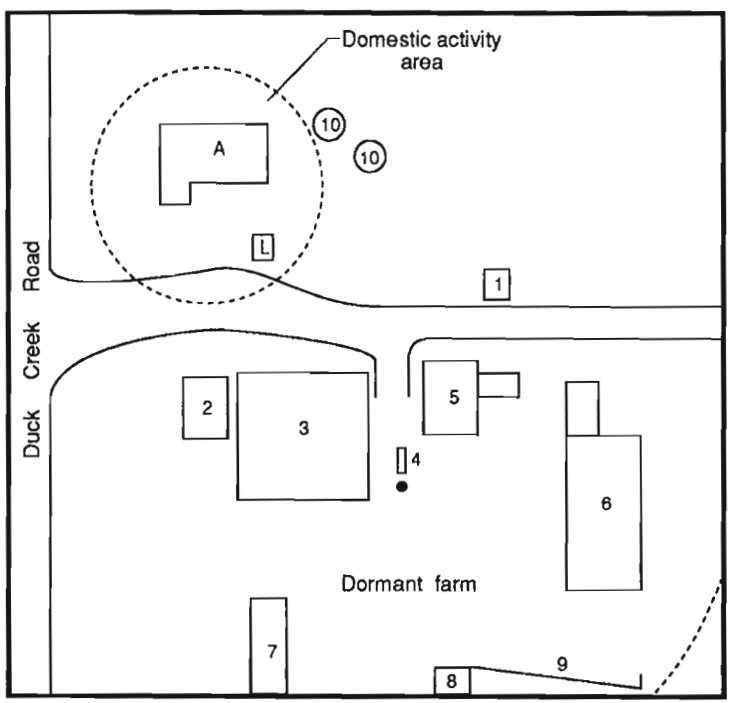


FIGURE 67

Yard Proxemics of the Moffett and Savin Occupations





A - Buchanan-Savin Farmhouse
C - Structure II (Back building / kitchen)
J - Privy I
L - Meat house
● - Well
1 - Milk storage shed
2 - Garage / repair shed
3 - Large equipment storage shed
4 - Water trough
5 - Bullpen
6 - Milking barn
7 - Corn crib
8 - Pigpen
9 - Retaining wall
10 - French drain
11 - Sidewalk

40 feet

N

dietary patterns, and consumption patterns (i.e., economic scaling using the ceramic index Miller 1980, 1988), and vessel function comparisons between sites). The results of these archaeological comparisons can in turn be related to questions in historical archaeology concerned with explicating and describing the patterns and processes of social and cultural change.

ARCHITECTURAL COMPARISONS

Research involving house dimensions has shown that house sizes, material of construction, and number of outbuildings can be correlated with social ranking (Herman 1987b). Herman's research has revealed that tenant houses "are typically smaller and of less expensive materials than the best houses," but otherwise "inseparable from the majority of the dwelling stock" (Herman, 1987b:9). Generally, tenants and poorer land owners lived in houses of between 380 and 490 square feet per floor, and lack the number and variation of outbuildings associated with wealthy owner-occupied houses (Herman 1987a:64). Archaeological sites often contain indicators of the size of historical house foundations. Whether the remains are stone lined cellars, post hole patterns, or as with the Buchanan-Savin Farmstead extant buildings, it is possible to make inferences of housing choice based on a comparison of the first floors of archaeologically investigated houses.

The Buchanan-Savin farmhouse as it stood in 1990 and the 1857 Kent Mutual fire insurance record of the house (Appendix V) allowed a diachronic comparison of the structure as it changed during the intervening 134 years. The 1857 Fire Insurance record presents a "snapshot" of the Buchanan house and Buchanan's two tenant houses as they appeared in the mid-nineteenth century. In 1857 the Buchanan house first floor measured 320 square feet, but by 1991 the first floor had tripled to 992 square feet. The much larger size of the 1991 Buchanan-Savin house suggests wealthier occupants, reflecting the Buchanans and Moffetts success as farmers.

The Buchanan-Savin farmhouse layout at the time of excavation was compared to other excavated house sites in New Castle County, Delaware occupied during the mid-nineteenth century (Table 24). The first floor dimensions were used in this analysis, and documentary research indicated that all but the one Buchanan tenant house was constructed with at least a garret or a second floor. Of the fourteen houses compared, five were predominantly owner-occupied: the Buchanan-Savin farmhouse (1857 and 1990), the Patterson Lane House (Catts et al. 1989), the William M. Hawthorn House (Coleman et al. 1984), the Wilson-Slack House (Coleman et al. 1985), and the Williams-Stump House (Catts and Custer 1990). The nine tenant-occupied houses examined included the two Buchanan tenant houses described in the 1857 fire insurance record, the Patterson Lane House (Catts et al. 1989) the Robert Ferguson House (Coleman et al. 1983), the Heisler Tenancy House (Catts et al. 1990), the Temple House (Hoseth et al. 1990), the Cazier Gate House (Hoseth, Catts, and Tinsman 1993), the Dickson II House (Catts et al. 1990) and the Grant Tenancy House (Taylor et al. 1987).

The comparison of first floor dimensions of archaeologically investigated houses from mid-nineteenth century New Castle County agreed with Herman's statements about the size and composition of tenant- and owner-occupied houses. All structures having less than 490 square feet of ground floor space were tenant-occupied except for the Williams House (Table 24). In the investigations of the Williams-Stump House, an African-American owner-occupied house, Catts and Custer (1990:230) found that "black-occupied dwellings clearly fall at the lower end of the scale for all housing stock" which fits it's low position in the floor size hierarchy.

The farmhouse at the Buchanan-Savin Farm site as it stood in 1990 held a middle position in comparison of square footage of floor space of houses at mid-nineteenth-century archaeological sites in New Castle County. Two tenant houses, the Patterson Lane House and

TABLE 24

First Floor House Dimension Comparisons of Mid-Nineteenth Century Archaeological Sites in New Castle County

Patterson Lane House (7NC-E-53) Late 18th - late 19th century Tenant occupied			46' x 29' =	1334 square feet
Buchanan tenant **1857** **Tenant occupied**	**Fire Insurance Record # 721**	**Frame original** **Frame kitchen**	**18' x 40' =** **18' x 24' =**	**720'** **432'** **1152 square feet**
Hawthorn (7NC-E-46) 1738-1960 Owner occupied		Log original Frame addition Frame kitchen	29' x 21' = 12' x 21' = 12' x 17' =	609' 252' 204' 1065 square feet
Buchanan-Savin (7NC-J-175) **1850-1990** **Owner occupied**		**Frame original** **Frame kitchen** **Frame original**	**16' x 20' =** **16' x 18' =** **24' x 16' =**	**320'** **288'** **384'** **992 square feet**
Wilson-Slack (N-6-269) 1850-1983 Owner occupied			32' x 30' =	960 square feet
Buchanan tenant **1857** **Tenant occupied**	**Fire Insurance Record # 722**	**Frame original** **Frame shed addition**	**24' x 30' =** **8' x 24' =**	**720'** **192'** **912 square feet**
Temple House (7NC-D-68) circa 1830-1955 Tenant occupied		Frame original Frame addition	26' x 20' = 16' x 20' =	520' 320' 840 square feet
Buchanan **1850-1857** **Owner occupied**	**Fire Insurance Record # 720**	**Frame original** **Frame back building**	**16' x 20' =** **12' x 28' =**	**320'** **336'** **656 square feet**
Ferguson House (N3902) 1837-1955 Tenant occupied		Addition	16' x 24' = 18' x 15' =	384' 270' 654 square feet
Williams House (Stump) (7NC-D-130), 1845-1930 Owner occupied			27' x 17' =	459 square feet
Cazier Tenancy (7NC-F-64), 1844-1935 Tenant occupied		West addition	17' x 17' = 17' x 9' =	289' 153' 442 square feet
Dickson II (7NC-E-82) 1845-1919 Tenant occupied			18' x 22' =	396 square feet
Grant Tenancy (7NC-B-6) circa 1830-1941 Tenant occupied		East addition	16' x 15.5' = 6' x 16.5' =	248' 99' 347 square feet
Heisler Tenancy (7NC-E-82) Tenant occupied			12' x 21' =	252 square feet

the Buchanan tenant house (Fire Insurance Record #721) had greater square footage than the Buchanan-Savin farmhouse of 1990. The great size of the Patterson Lane House, largest of those in the comparison, was attributed to its original construction as an owner-occupied residence (Catts et al. 1989). This does not seem to be true of the Buchanan Tenant House (Fire Insurance Record #721) which was recorded on the 1849 Rea and Price Map (Figure 7) as owned by Joseph Fleming who, according to his will, lived on his plantation called Cedar Swamp. The first floor dimensions of the farmhouse at the Buchanan-Savin Farm site in comparison with other mid-nineteenth-century houses archaeologically investigated, revealed that the house was mid-range in size.

When viewed within the context of the year 1857, the Buchanan house (Insurance Record #720; 656 sq. ft.) was smaller than both the Buchanan Tenant Houses (Insurance Record #721 with 1152 sq. ft. occupied by Mr. Shaw and Insurance Record #722 with 912 sq. ft. occupied by Thomas Maloney (Appendix V). All three structures were of frame construction, and had outbuildings. The Buchanan's choice to live in the smallest of their houses becomes more poignant considering that from 1850-1860 their household numbered twelve individuals! Herman asserts that quality of construction materials, number of outbuildings and size differentiate tenant- and owner-occupied houses. The Buchanan farmhouse of 1857 and the Buchanan Tenant houses were all of frame construction, so quality of building materials seems similar. As to size, one factor that cannot easily be detected archaeologically is the homes' number of floors. Luckily the Kent County Mutual Fire Insurance records this information. Similar sources exist for the other houses in the study. A second floor sensitive comparison allowed for cellars and assigned .5 value for half floors such as attics (Table 25). By arbitrarily doubling Herman's sizing scheme of 490 square feet to 980 square feet, it creates a comparable context for floor sensitive dimensions. Doubling the tenant/owner house size dimensions was created based on the assumption that the average house had two or at least one-and-a-half stories. The position of individual houses shifted within the dimension hierarchy, but the overall pattern remained the same. The houses of the greatest dimensions were a mix of white owner-occupied and tenant-occupied houses, while the houses below the modified sizing scheme of 980 square feet were all tenant-occupied except for the Williams-Stump House. The Williams-Stump House's low position in the dimension hierarchy can be attributed to its black owner-occupation. The modified story sensitive house dimensions of black-occupied houses were all smaller than all the white-occupied houses, whether owner- or tenant-occupied.

Within the new comparison the Buchanan House of 1857 compared more favorably with Buchanan's tenant houses. Thomas Maloney's tenant-occupied house (Insurance Record #722), while larger in first floor space (912 sq. ft.) than the Buchanan House (656 sq. ft.), had no second floor (Table 24). Floor sensitive comparisons revealed that the Buchanan House with 1.5 floors has 984 sq. ft., and was a third larger than the 912 square feet of the one-story tenant house (Table 25). Buchanan's other Tenant House occupied by Mr. Shaw (Insurance Record #721) had two floors and actually increased the size difference between the two homes. The Buchanan Tenant House (Insurance Record #721) has a floor sensitive size of 2,304 sq. ft., fully twice the 984 square feet of the Buchanan house in 1857. In fact, the Buchanan Tenant House (Insurance Record #721) also contained a new barn that was worth more than all the Buchanan outbuildings combined, and the Tenant House was valued at three times the worth of the Buchanan House. It is obvious that the Buchanan family made a continuous choice to live in a smaller, less costly house than what was available. This can be seen as a pragmatic choice on Buchanan's part, who desired to reap the financial rewards of renting the largest of his holdings over the comfort and status of his large family.

Comparisons of first floor and multi-floor dimensions of houses at mid-nineteenth-century archaeological sites in New Castle County revealed that the Buchanan-Savin farmhouse maintained a position above most tenant- and owner-occupied houses. The results of the architectural comparisons indicated that the documentary information regarding the small size of tenant and small land owner dwellings (ranging from 250 to 460 square feet of ground floor

TABLE 25

All Floor House Dimension Comparisons of Mid-Nineteenth Century Archaeological Sites in New Castle County

Patterson Lane House (7NC-E-53) Late 18th-Late 19th century Tenant occupied			1334' x 2.5 stories = 3335 square feet
Wilson-Slack (N-6-269) 1850-1983 Owner occupied			960' x 2 stories = 1920' cellar = 960' 2880 square feet
Buchanan Tenant **1857** **Tenant occupied**	**Fire Insurance Record #721**	**Frame original** **Frame kitchen**	**720' x 2 stories =1440'** **432' x 2 stories = 864'** **2304 square feet**
Buchanan-Savin (7NC-J-175) **1850-1990** **Owner occupied**		**Frame original** **Frame kitchen** **Frame addition**	**320' x 1.5 stories = 480'** **288' x 1.5 stories = 432'** **384' x 2 stories = 768'** **cellar = 384'** **2064 square feet**
Temple House (7NC-D-68) circa 1830-1955 Tenant occupied		Frame original Frame addition	520' x 2 stories = 1040' 320' x 1.5 stories = 480' cellar = 520' 2040 square feet
Hawthorn (7NC-E-46) 1738-1960 Owner occupied		Log original Frame addition Frame kitchen	609' x 2 stories = 1218' 252' x 1 story = 252' 204' x 1 story = 204' 1674 square feet
Ferguson House (N-3902) 1837-1955 Tenant occupied		Original Addition	384' x 2 stories = 768' 270' x 1.5 stories = 405' 1173 square feet
Buchanan House **1850-1857** **Owner occupied**	**Fire Insurance Record # 720**	**Frame original** **Frame back building**	**320' x 1.5 stories = 480'** **336' x 1.5 stories = 504'** **984 square feet**
Buchanan Tenant **1857** **Tenant occupied**	**Fire Insurance Record # 722**	**Frame original** **Frame shed addition**	**720' x 1 story = 720'** **192' x 1 story = 192'** **912 square feet**
Grant Tenancy (7NC-B-6) circa 1830-1941 Tenant occupied		Original East addition	248' x 2 stories = 496' (assumed) 99' x 1 story = 99' cellar = 248' 843 square feet
*Heisler Tenancy (7NC-E-82) Tenant occupied			252' x 2 stories = 504' cellar = 252' 756 square feet
*Cazier Tenancy (7NC-F-64) 1844-1935 Tenant occupied		Brick original West addition	289' x 2 stories = 578' 153' x 1 story = 153' 731 square feet
*Williams House (7NC-D-130) 1845-1930 Owner occupied			459' x 1.5 stories = 688.5 square feet
*Dickson II (7NC-E-82) 1845-1919 Tenant occupied			396' x 1.5 stories = 594 square feet

* Indicates black occupied

space) will also be manifested in the archaeological record. Similar results of comparative analyses conducted with sites on Patterson Lane (Catts et al. 1989), the Thomas Williams site (Catts and Custer 1990), the A. Temple Site (Hoseth et al. 1990) and the Cazier site (Hoseth, Catts, and Tinsman 1993) have shown that a relative ranking of dwellings, indicating the

socioeconomic status of sites' inhabitants, can be conducted using archaeological data about structures.

CERAMIC ECONOMIC SCALING

It has been contended by historical archaeologists that ceramics can be used to measure and define the relative economic value of an archaeologically-derived household ceramic assemblage. The ceramic economic value implies the relative social and economic status of the site's inhabitants (Deetz 1977:46-61; Goring 1980-81; Miller 1980:10-11; Spencer-Wood 1987:60; Majewski and O'Brien 1987). The durability, abundance, and ability to serve as status indicators make ceramics significant to historical archaeologists. However, ceramics are not the only indicators of social and economic status. Preliminary research into the presence and value of ceramic vessels in early nineteenth-century storekeepers' probate records in Delaware found that ceramics accounted for only two to three percent of the total value of the shop's inventory, while high visibility status items, such as textiles and clothing, accounted for one-half to eighty percent of the total value of the inventory (Catts et al. 1989). Clearly, ceramics played a small role in conspicuous consumption, and other factors can be reflective of economic and social status. Baugher and Venables (1987:37) have pointed out that there is a wide range of variables to take into account when considering the economic status of a site's occupant, such as annual income, size of land holdings, presence of slaves or servants, number of tenant houses, the occupant's heritage, religion, ethnicity, and even personal preferences and behavior. By and large, it has been shown that through careful historical and archaeological analysis ceramics are reflective of social and economic class. As Suzanne Spencer-Wood (1987:60) has stated, this ceramic research has found that:

> individuals of higher economic and social status would usually have more of their economic resources in expensive ceramics than would individuals of lower status. However, some wealthy families particularly in occupations such as farming, might choose to invest less than would be expected in ceramics due to competing investments in land and other goods. On the other hand, since both nineteenth and twentieth century studies indicate that investment in ceramics formed only the smallest proportion for the wealthy, it can reasonably be expected that individual preference or overextended investments in other goods would result in ceramic choices that are not related to occupational status.

Currently, the most widely adopted method used for establishing the economic value for historical ceramics is the ceramic scaling index developed by George L. Miller (1980). Miller's scale is based on the index values assigned to certain decorative types of refined nineteenth-century wares, derived from price fixing lists of the late eighteenth and nineteenth- century English potteries. Each index value is expressed in relation to cream-colored ware, the consistently least expensive, most utilitarian decorative type on their price lists. Miller's index for cream-colored ware is 1.00 through time, and values of other decorative types are expressed in relation to the cream-colored ware index. The index values generated in 1980 were based on four price-fixing lists and one potter's catalog, and it was assumed at that time that the price of cream-colored ware was stable throughout the nineteenth century. Miller (1988) has since revised his original index values, basing them now on fourteen price-fixing lists and catalogs, and has found that there was more fluctuation of ceramic prices in the nineteenth century than was originally hypothesized. Generally, the revisions affected only those index values for the years after 1844 (Miller 1988:2).

Indices derived from the Miller analysis, using the new 1988 revisions, were calculated for minimum vessels in three categories: cups and saucers, plates, and bowls. Additionally, Klein and Garrow (1984), Spencer-Wood and Herberling (1987), and others have calculated a mean index value by summing the separate indices from the three categories (teas, plates, and bowls), and dividing by the total number of ceramic vessels used in the separate index calculations.

TABLE 26

Miller Index Values for Ceramic Vessels from Features

	Vessel number	Decoration/ ware type	1858-1859 Index value	x	Number recorded	=	Value
Plates	72, 85	Edged	1.09	x	2	=	2.18
	83, 84, 87, 94, 97, 98	Cream-colored ware	1.00	x	6	=	6.00
	88	Edged	1.05	x	1	=	1.10
							9.28
		Total / number of vessels = Average			9.28 / 9 = 1.03		
Tea cups and saucers	NONE						
Bowls	18, 19, 20, 27, 28	White china	2.54	x	5	=	12.70
	90	Cream-colored ware	1.00	x	1	=	1.00
	31, 32, 33, 37, 40, 42, 46, 47, 49	White granite	2.49	x	9	=	22.41
	53	Painted	1.38	x	1	=	1.38
							37.49
		Total / number of vessels = Average			37.49 / 16 = 2.34		

Note: Mean Ceramic Date - 1862.4
Index Dates Used - 1858, 1859

There are several caveats to keep in mind when using the Miller Ceramic Index (Majewski and O'Brien 1987:131-135). First, index values are not available for many years in the nineteenth century, creating problems in the assigning of index values to ceramic decorative types from assemblages whose date of occupation falls between years for which price lists are available. Most researchers have remedied this problem by extrapolating values from adjacent years or the nearest year for which values are available. Since archaeological ceramic assemblages date from sites that are generally occupied over long periods of time in relation to ceramic prices and production, this extrapolation is acceptable.

Secondly, Miller (1980) suggests that for the purposes of determining which index year to use, the mean ceramic date (MCD) of the assemblage should be utilized. Most historical archaeologists have used this procedure (see example, Spencer-Wood and Haberling 1987; Morin et al. 1986). The ceramic economic index analysis for the Buchanan-Savin Farmstead utilized the mean ceramic date of 1862.4 (without redware) from artifacts found in features as the index date for the site. While the tea index has been found to be most representative of the true social ranking of a site's inhabitants (Spencer-Wood and Heberling 1987:79), no teawares, that fit within the Miller Index parameters, were recovered from the features at the Buchanan-Savin Farmstead. Sixteen bowls and nine plates were found to fit within the decoration types utilized by Miller (Table 26). Decaling was a decoration type present in ten percent of the minimum vessels but not covered in the price lists. Twenty-five minimum vessels, roughly one quarter of the assemblage, could be included in the Miller Index. Miller has stated that more values for the late nineteenth century could be generated utilizing white granite ware as the

TABLE 27

Miller Index Value for Early Nineteenth Century Ceramic Assemblages

Site	Plates
Buchanan-Savin Farmstead, DE	**1.03**
T. Mendenhall, DE	1.06
Dickson I, DE	1.16
T. Hamlin, NJ	1.19
Whitten Road, DE	1.20
C. Allen, DE	1.35
Dr. Way/ Retail, DE	1.45
J. Richardson, DE	1.93
Cannon's Point, Overseer, GA	1.99
Cannon's Point, Planter, GA	2.69
Evans-Black Tenant House, DE	3.47
Site	**Bowls**
Whitten Road, DE	1.00
Evans-Black Tenant House, DE	1.09
Cannon's Point, Overseer, GA	1.23
Cannon's Point, Planter, GA	1.23
T. Mendenhall, Wilmington, DE	1.25
Dr. Way/ Retail, DE	1.38
C. Allen, DE	1.45
Dickson I, DE	1.53
T. Hamlin, NJ	2.14
Buchanan-Savin Farmstead, DE	**2.34**
J. Richardson, DE	2.53
Site	**Overall**
Whitten Road, DE	1.22
T. Mendenhall, DE	1.39
Dickson I, DE	1.45
C. Allen, DE	1.58
Buchanan-Savin Farmstead, DE	**1.68**
T. Hamlin, NJ	1.68
Cannon's Point, Overseer, GA	1.94
Evans-Black Tenant House, DE	1.96
J. Richardson, DE	2.15
Dr. Way/ Retail, DE	2.25
Cannon's Point, Planter, GA	2.63

basis index (George Miller, personal communication 1991). New values based on white granite ware and decal decorations would offer a more complete view of the Buchanan-Savin assemblage.

The application of Miller's Index using the 1858 and 1859 index dates, yielded values of 1.03 for plates and 2.34 for bowls (Table 27). The average index for the Buchanan-Savin Farmstead ceramic assemblage was 1.68 which suggests a low income household, not the mid-upper class household concluded in the architectural economic comparison. Presently, there are few reports on excavated sites of the mid-nineteenth and early twentieth-century period in the Middle Atlantic region that have utilized Miller Indexing. Utilizing the early nineteenth-century sites for comparison to the Buchanan-Savin Farmstead assemblage ignores Miller's warning that "one should not compare index values from assemblages that are separated by long periods of time"; also the 1990 updated values were utilized in the present investigation, whereas others used in the Thomas Williams comparison were derived from Miller 1980 values. Despite these draw-backs the Buchanan-Savin Farmstead assemblage has shown to be comparable, and revealed meaningful information. Thus, the Buchanan-Savin Farmstead ceramic index was compared to other nineteenth-century sites including four rural New Castle County sites -- the Thomas Williams site (Catts and Custer 1990), the Whitten Road site

(Shaffer et al. 1988), the Dickson I component at Patterson Lane (Catts et al. 1989), the Allen House site (Basalik, Brown, and Tabachnick 1987) -- and the Thomas Hamlin site (Morin et al. 1986) from rural New Jersey. Three sites from urban Wilmington were also used -- the Thomas Mendenhall site (Herman 1984; Catts and Custer 1990 for index values), the Dr. Way/Retail Shop site (Klein and Garrow 1984), and the John Richardson site (LeeDecker et al. 1987). The index information was taken from Catts and Custer's (1990) investigation of the early nineteenth-century Thomas Williams site.

The index of plates from the Buchanan-Savin Farmstead assemblage was the lowest of all sites. Conversely the bowl index was nearly the greatest, topped only by the ceramic assemblage of J. Richardson a wealthy Wilmington resident (LeeDecker et al. 1987). The Buchanan-Savin Farmstead ceramic economic index very closely matched that of the Thomas Hamlin site in New Jersey. The index values of plates (1.03 Buchanan-Savin, 1.19 Thomas Hamlin), and bowls (2.34 Buchanan-Savin, 2.14 Thomas Hamlin), are similar and maintained like positions in respect to the other assemblages compared (Table 27). Both the Buchanan-Savin Farmstead and the Thomas Hamlin site ceramic assemblages had an average ceramic index value of 1.68.

Hamlin was a rural land owning farmer who "did not express his wealth through household goods," but "expressed his wealth in other ways, possibly through other components of the farmstead (e.g., land, animals, buildings, etc.)" (Morin, Klein, and Friedlander 1986: abstract). This model may hold true for the heads of the families who occupied the nineteenth-century Buchanan-Savin farmhouse (i.e. George W. Buchanan and sons and grandson, Francis C. Armstrong), that these rural farming families expressed affluence through their farms and stock.

VESSEL FUNCTION ANALYSIS

One of the purposes of this study, in accordance with the state historical archaeological management plan, has been to look at household social and economic strategies and then to place the households into their communities and culture (De Cunzo and Catts 1990). The minimum ceramic and glass vessels from features at the Buchanan-Savin Farmstead were divided into various categories and then compared with other deposits to distinguish general trends and characteristics regarding vessel use and function (Otto 1984; Kelso 1984). These studies analyzed vessel form frequencies in order to identify diachronic and spatial differences in the lifestyles between social and economic classes (Kelso 1984). Other systematic comparisons in the local area have utilized straight minimum vessel percentages for comparison and consequently have tended to underestimate the variability of the vessel assemblage (e.g. Thompson 1987). In order to avoid this shortcoming, a difference-of-proportion test (Parsons 1974:445-449) was applied to the paired combinations of the sites for each of the vessel categories in order to statistically determine the degree of similarity between site minimum vessel assemblages. Past comparisons of this type have used functional group totals within the difference-of-proportion test (Coleman et al. 1990; Catts and Custer 1990; Hoseth et al. 1990). This investigation utilized total vessel count in the belief that this better reflects the ceramic and glass assemblages as a whole.

The original data recovery plan called for the comparison of the Buchanan-Savin Farmstead with the Kimmey House site (Jamison et al. n.d.), the Moore-Taylor site (Grettler et al. n.d.), and the Wilson-Lewis Tenant site (Grettler et al. n.d.). This was not possible as investigations of these sites have yet to be completed. Thus, other regional historical archaeological sites with similar occupation dates, functions, and/or ethnic group, and comparable data were chosen for comparison with the Buchanan-Savin Farmstead. The rural African-American occupied Cazier Tenant House (Hoseth, Catts, and Tinsman 1993), the urban middle class shopkeeper-occupied 304/306 King Street (Klein and Garrow 1984), and the semi-rural white owner-occupied Allen site (Basalik, Brown, and Tabachnick 1987) were used in the comparison as these sites offered a contrast of urban and rural, and white owner-occupied with black tenant-occupied sites within New Castle County.

TABLE 28

Ceramic Vessel Frequencies Utilized in Difference-of-Proportion Test

	Buchanan-Savin Farm Site 1849-1990	Allen Site 1850-1900	304/ 306 King Street 1880-1900 Feature 10	Cazier Tenant Site 1850-1925
Flatware	43 (45%)	188 (46%)	9 (41%)	33 (28%)
Hollowware	53 (55%)	223 (54%)	13 (59%)	85 (72%)
Serving	54 (77%)	323 (58%)	1 (37%)	13 (65%)
Storage/ preparation	16 (23%)	235 (42%)	2 (67%)	7 (35%)
Cups	4 (88%)	45 (62%)	7 (100%)	10 (77%)
Mugs/ jugs	1 (12%)	28 (38%)	0 (0%)	3 (23%)

The categories compared were flatwares to hollowwares, serving vessels to storage/preparation vessels, and cups to ceramic mugs and jugs (Tables 28 and 29). At most residential sites, the flatware/hollowware ratio is indicative of food consumption and dietary patterns, with an abundance of flatwares suggestive of roast prime meat cuts, and more hollowware as indicative of the consumption of stews or other "one pot" meals by the site's inhabitants. The comparison of the numbers of serving vessels with storage and preparation vessels, basically allows the examination of the proportion of hollowware vessels related to serving vessels, assuming that an economically restricted household would utilize a smaller proportion of non-utilitarian serving vessels. The comparison of cups with mugs/jugs also offers indications of economic status through the site's occupant's use of utilitarian drinking vessels. High percentages of flatwares, serving, and cup ceramic vessels reflects wealth and/or concerns with demonstrating status; high percentages of hollowwares, serving/preparation, and mug/jug ceramic vessels reflects the occupants concern with functionality, indifference, or inability to display class through ceramic goods.

Difference-of-proportion tests were generated for each functional group in relation to the total ceramic minimum vessels found at each site, in comparison with each other site (Tables 28 and 29). Test statistic values greater than 1.96 signaled a significant difference-of-proportion, indicating that the sites' functional categories were not similar. One value sufficed for the flatware and hollowwares as all ceramic dishes could be determined as one or the other. Each site of the same functional group was placed in a hierarchy dependent on the highest percentage of vessels. Then the difference-of-proportion results were utilized to determine groupings of comparable assemblages not evident in normal percentage hierarchies (Table 30).

Flatwares from the Buchanan-Savin Farmstead were found to be comparable with those of the Allen and 304/306 King street, but different from those at the Cazier site. Since flatwares are indicators of expensive cuts of meat, the occupants of the Buchanan-Savin Farmstead had a more expensive diet than the Cazier site occupants. The occupants of the Allen House, 304/306 King Street, and the Buchanan-Savin Farmstead had better access to varied cuts of meat, through on-site butchering or markets.

The Buchanan-Savin Farmstead and Allen site hollow vessel forms were similar, thus supporting the more frequent use of flat vessel forms. Analysis of flat and hollow forms of ceramic vessels indicated that the occupants of the Buchanan-Savin Farmstead possessed a rich diet with regard to comparable mid-nineteenth-century sites in New Castle County.

TABLE 29

Results of Ceramic Difference-of-Proportion Test

	Buchanan-Savin	Allen	304/ 306 King Street
Flatware/ Hollowware			
Cazier Tenant	2.56*	3.45*	1.22
304/ 306 King Street	0.33	0.44	
Allen	0.17		
Storage			
	Buchanan-Savin	**Allen**	**304/ 306 King Street**
Cazier Tenant	2.52*	9.85*	0.55
304/ 306 King Street	0.89	4.41*	
Allen	7.15*		
Serving			
	Buchanan-Savin	**Allen**	**304/ 306 King Street**
Cazier Tenant	7.10*	13.44*	0.93
304/ 306 King Street	4.38	7.80*	
Allen	4.51*		
Mugs and Jugs			
	Buchanan-Savin	**Allen**	**304/ 306 King Street**
Cazier Tenant	0.81	1.74	0.76
304/ 306 King Street	0.48	1.27	
Allen	2.19*		
Cups			
	Buchanan-Savin	**Allen**	**304/ 306 King Street**
Cazier Tenant	0.32	0.28	3.08*
304/ 306 King Street	3.21*	2.93*	
Allen	1.06		

* Greater than 1.96 equating a dissimilar value

While the hierarchy of the serving and preparation/storage functional groups revealed that the Buchanan-Savin Farmstead ceramic assemblage was at the top of the serving functional group and at the bottom of the storage/preparation group, all of the ceramic assemblages investigated were dissimilar (Table 30). The 304/306 King Street ceramic assemblage contained the highest percentage of cups (100%), but was dissimilar to the other sites investigated. The Buchanan-Savin Farmstead ceramic assemblage was similar in the mug/jug functional group to the King Street site, but dissimilar to the Allen and Cazier sites. The Buchanan-Savin Farmstead occupants utilized a smaller percentage of mugs and jugs than the occupants of the Allen and Cazier sites. Finally, the difference-of-proportion test determined that the ceramic assemblages

TABLE 30

Ranking of Sites by Ceramic Category

Flat	Hollow	Serving	Preparation/ storage	Cups	Mugs/ jugs
[Allen Buchanan-Savin King]	[Cazier King]	Buchanan-Savin	King	King	[Allen Cazier]
Cazier	[Buchanan-Savin Allen]	Cazier	Allen	[Buchanan-Savin Cazier Allen]	[Buchanan-Savin King]
		Allen	Cazier		
		King	Buchanan-Savin		

Note: Brackets indicate similar assemblages

TABLE 31

Summary of Significant Similarities Among Ceramic Vessel Form Comparisons

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	1	2	1
304/ 306 King Street	2	1	
Allen	3		

TABLE 32

Glass Vessel Frequencies Utilized in Difference-of-Proportion Test

	Buchanan-Savin Farm Site 1849-1990	Allen Site 1850-1900	304/ 306 King Street 1880-1900 Feature 10	Cazier Tenant Site 1850-1925
Beverage	4 (4%)	49 (50%)	4 (4%)	28 (24%)
Food	15 (13%)	27 (27%)	4 (4%)	36 (30%)
Medicinal	36 (32%)	22 (22%)	35 (35%)	25 (21%)
Household	56 (51%)	1 (1%)	58 (57%)	30 (25%)
Alcoholic beverage	4 (100%)	9 (18%)	0 (0%)	18 (64%)
Non-alcoholic beverage	0 (0%)	40 (82%)	4 (100%)	10 (36%)
Drinking	24 (86%)	0 (0%)	21 (84%)	8 (22%)
Beverage	4 (14%)	49 (100%)	4 (16%)	28 (78%)
Drinking	24 (75%)	0 (0%)	21 (91%)	8 (57%)
Tableware	8 (25%)	0 (0%)	2 (9%)	6 (43%)

of the Buchanan-Savin Farmstead and the Allen site, both occupied by upper class occupants, were most similar (Table 31).

The glassware assemblages of the Buchanan-Savin Farmstead, Allen site, 304/306 King Street, and the Cazier Tenancy were also analyzed using the difference-of-proportion test. Eight functional groups of glass minimum vessels were investigated; beverage, food, medicinal, household, alcoholic beverage, non-alcoholic beverage, drinking, and table glass (Tables 32 and 33). The beverage functional group, including both alcoholic and non-alcoholic commercial beverage bottles, and the food functional group, including preserves and condiments, reflected the nutritional pattern of the sites occupants. Medicinal glass vessels demonstrate concerns over health, and the economic ability of the site's occupants to meet those concerns. The non-alcoholic and alcoholic beverage functional groups can be compared to detect patterns of alcohol use. Research by Staski (1984:45-46) points out that the use of alcohol is culturally prescribed, and may offer indications of ethnicity and suggests that consumers of large amounts of alcohol also used more medicines than consumers of smaller amounts of alcohol. Drinking and table glass functional groups when contrasted offer an economic indicator based on the use of utilitarian bottles and jars or more ornate table glasses such as tumblers and stemware.

To gain insight into the glass vessel use patterns of the mid-nineteenth-century site occupants, the beverage, food, medicinal, and household functional categories were tested with the difference-of-proportion test to determine comparability of the glass assemblages (Tables 33 and 34). The Buchanan-Savin Farmstead beverage functional group was similar to the 304/306 King Street assemblage, while neither the Allen or Cazier sites were similar to any site.

The beverage glass functional group was further reduced to alcohol and non-alcohol vessels, drinking and tableware, and drinking and beverage group comparisons. The Buchanan-Savin Farmstead's alcoholic and non-alcoholic glass vessel collections were dissimilar to any other site investigated. The drinking glass function group of vessels from the Buchanan-Savin Farmstead was similar to the 304/306 King Street vessels, but dissimilar to the Cazier and Allen sites. The Cazier Tenant site, Buchanan-Savin Farmstead, and 304/306 King Street were similar concerning tablewares. While the occupants of the Cazier Tenant site were not wealthy, they may have received expensive hand-me-downs from the nearby Cazier Mansion house (Hoseth, Catts, and Tinsman 1993).

The drinking function group of the Buchanan-Savin Farmstead was similar to the 304/306 King Street site and to the beverage function group of the Cazier Tenant and 304/306 King Street sites. These two functional groups, in comparison with each other, revealed that the glass assemblage of the Buchanan-Savin Farmstead was high when considering non-utilitarian, drinking vessels and low in the beverage function group (Table 34). The beverage function group and all its subdivisions illustrate that the glass vessel assemblage of the Buchanan-Savin Farmstead probably reflected the occupants' desire to have fine dining wares, reflecting their landowning class.

The difference-of-proportion tests indicated that the Buchanan-Savin Farmstead assemblage of food glass vessels was incomparable to the other sites investigated (Tables 33 and 34). The medicine bottles of the Buchanan-Savin Farmstead were similar to those retrieved from the 304/306 King Street and Allen sites. The Buchanan-Savin Farmstead and 304/306 King Street household function glass vessels were similar using the difference-of-proportion test.

Overall, the glass assemblages of the Buchanan-Savin Farmstead and the 304/306 King Street site were found to be similar in seven out of ten cases (Table 35). The high incidence of similarity between these two sites can be attributed to shared views of consumerism. The occupants of the Buchanan-Savin Farmstead were upper class land holders who could afford quality goods but displayed wealth through farm and livestock. The middle class mercantile

TABLE 33

Results of Glass Difference-of-Proportion Test

Beverage

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	4.36*	3.99*	4.10*
304/ 306 King Street	0.14	7.30*	
Allen	7.64*		

Food

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	3.05*	0.48	5.04*
304/ 306 King Street	2.43*	4.55*	
Allen	2.49*		

Medicinal

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	1.96*	0.22	2.26*
304/ 306 King Street	.034	1.95	
Allen	1.65		

Household

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	3.95*	5.09*	4.86*
304/ 306 King Street	1.02	8.75*	
Allen	8.04*		

Alcoholic Beverage

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	2.97*	1.35	4.08*
304/ 306 King Street	1.93	3.10*	
Allen	1.65		

Non-alcoholic Beverage

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	3.12*	5.60*	1.35
304/ 306 King Street	2.12*	6.22*	
Allen	7.44*		

Drinking

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	3.26*	2.63*	3.07*
304/ 306 King Street	0.15	4.80*	
Allen	4.92*		

Table

	Buchanan-Savin	Allen	304/ 306 King Street
Cazier Tenant	0.69	2.27*	1.21
304/ 306 King Street	1.79	1.41	
Allen	2.72*		

* Greater than 1.96 equating a dissimlar value

TABLE 34

Ranking of Sites by Glass Category

Beverage	**Food**	**Medicinal**	**Household**
Allen	[Cazier Allen]	[King Buchanan-Savin Allen]	[King Buchanan-Savin]
Cazier	Buchanan-Savin	Cazier	Cazier
[Buchanan-Savin King]	King		Allen

Alcholic	**Non-alcoholic**	**Drinking**	**Tableware**	**Drinking**	**Beverage**
Buchanan-Savin	King	[King Buchanan-Savin]	[Cazier Buchanan-Savin King]	[Buchanan-Savin King]	Allen
[Cazier Allen]	Allen	Cazier	Allen	Cazier	[Cazier King Buchanan-Savin]
King	Cazier	Allen		Allen	
	Buchanan-Savin				

* Brackets indicate similar assemblages

TABLE 35

Summary of Significant Similarities Among Glass Vessel Form Comparisons

	Buchanan-Savin	**Allen**	**304/ 306 King Street**
Cazier Tenant	2	2	1
304/ 306 King Street	7	1	
Allen	1		

* Maximum value is 10.

TABLE 36

Total Similarities of Glass and Ceramic Assemblages

	Buchanan-Savin	**Allen**	**304/ 306 King Street**
Cazier Tenant	3	4	2
304/ 306 King Street	9	2	
Allen	4		

* Maximum value is 16.

occupants of the 304/306 King Street had access to goods "at cost" that allowed them to acquire goods associated with people of a higher class.

Although the glass of the Buchanan-Savin Farmstead was most similar to that of the middle class 304/306 King Street, the ceramic assemblage was most similar to that of the upper class Allen site (Table 36). This places the occupants of the Buchanan-Savin Farmstead into the low-upper class as reflected by archaeologically acquired material culture remains.

CONCLUSIONS

Archaeological research at the Buchanan-Savin Farmstead, along with census records, birth and death records, deeds, fire insurance records and dozens of other archival records have combined to present a vivid picture of upper class, white farmers of southern New Castle County. The originator of the farm was George W. Buchanan, who had purchased a large tract of land, that included the Buchanan-Savin Farmstead from his father-in-law Joseph Fleming. After George W. Buchanan's death in 1866, the farm and a small plot of land passed to Anne E., George W. Buchanan's second wife as a widow's dower. James and later George W.(III), Anne E.'s stepsons (the only surviving sons of George W. Buchanan) farmed the widow's dower for forty-three years until the parcel passed to Francis C. Armstrong, who acquired the Buchanan farm through his mother Anna A. (Buchanan) Armstrong, George W, Buchanan's second eldest daughter. Anna A. Armstrong's husband Samuel A., had several years previously acquired the remainder of Buchanan land, originally purchased from Joseph Fleming (Francis C. Armstrong's Great-Grandfather). This last transaction marked a land exchange through four generations, and in each case the transfer was instigated by relationships with the females of the Fleming-Buchanan-Armstrong families.

Excavation of plow zone survey units and archaeological features provided the information inherent in the pattern of features and allowed reconstruction of the agricultural buildings and fences. The "back building," "stable and carriage house," and "meal, corn, and tool house" mentioned in a 1857 Kent Mutual fire insurance record were archaeologically located, as well as several other unrecorded auxiliary outbuildings. These structures represented the full life span of a nineteenth-century farm, from its inception circa 1850, through years of prosperity in the 1860's, and the farm's decline soon after the turn of the century. The Buchanan-Savin Farmstead passed through many hands, but stayed within the extended Buchanan family until the sale of the property to T. R. Moffett in 1921.

The archaeological evidence supports the documentary history. The mean ceramic dates without redware for each of the archaeologically derived structures fell within a ten year span, from 1860-1870, reflecting the most prosperous period of the Buchanan-Savin Farmstead. An end date for several of the structures was derived from dated bottles, indicating that the agricultural buildings may have been dismantled soon after the turn of the century. The agricultural activity area of the Buchanan-Savin Farmstead was enclosed within a sixty-five foot square fence and included a corn and tool house, carriage barn and stables, possibly one or more privies, a covered well, and animal pens. The fencing established the demarcation between the farm and the domestic house. The two foci, agricultural and domestic, were reflected in the distribution of the artifacts within the plow zone. The farm portion of the site was highest in architectural artifacts such as nails and window glass. The small portion of the domestic activity area that was excavated was found to contain high amounts of ceramics and bottle and jar glass.

The excavated portion of the domestic activity area of the Buchanan-Savin Farmstead contained chiefly an archaeologically derived structure recorded as the "back building" in a fire insurance policy. The portion of the domestic activity area surrounding the Buchanan-Savin farmhouse (still extant at the time of excavation) was not excavated, but archival investigation demonstrated that the house had nearly tripled in size since the mid-nineteenth century. Also